

Pollution Prevention Strategic Planning at
U.S. Army Military District of Washington

Mr. Thomas R. Eschner, P.G., and Mr. Michael J. Curato, P.E.
Harding Lawson Associates, P.O. Box 7050, Portland, ME 04112
Phone (207) 775-5401/Fax (207) 772-4762

Mr. David L. Keys
U.S. Army Military District of Washington, Environmental Programs,
Fort Lesley J. McNair, D.C. 20319-5058
Phone (202) 685-2843/Fax (202) 685-3437

and

Mr. Alan J. Felser, P.E., Mr. Michael Renga
Harding Lawson Associates, 2120 Washington Blvd., Suite 300, Arlington, VA 22204
Phone (703) 769-8165/Fax (703) 769-8182

ABSTRACT

The Department of Defense (DOD) and Department of the Army (DA) have directed that environmental compliance will be achieved and sustained through pollution prevention (P2). The benefit of this approach is clear for high-impact and high-cost industrial and training operations within the Army.

The U.S. Army Military District of Washington (MDW) is a unique and highly diversified Major Army Command (MACOM) that consists of seven installations assigned to five military communities. It lacks a concentration of heavy industrial operations and large-scale training operations typical of many other Army MACOMs; consequently, many of the typical P2 projects and initiatives undertaken at installations in other MACOMs are not applicable to MDW installations. However, MDW's installations are situated in environmentally sensitive areas with high public visibility. For these reasons, MDW developed a MACOM-wide pollution prevention program that includes environmental benefits along with economic value.

Our analysis indicates that the previous P2 program funding was not consistent with the intent to achieve compliance through P2. To move its P2 Program toward the directive of achieving and maintaining compliance through P2, MDW established six objectives for a new P2 Program in the MACOM. MDW then evaluated its existing systems, conducted a needs assessment of all of its installations, and prepared a P2 Strategic Plan that included an eight-step P2 Program. MDW's P2 Program funding strategy includes use of (1) the Army's Service-Based Costing model, the Implementation-Pollution Abatement and Prevention Analysis (I-PAPA); (2) an additional cost-benefit analysis developed by the MDW/Harding Lawson Associates (HLA) team; and (3) a decision matrix developed by the team to evaluate a project's indirect cost and non-economic benefits.

This P2 Strategic plan and its funding strategy allow both installations and MDW to promote candidate P2 projects using a consistent methodology of economic and non-economic factors. The funding strategy generates both an installation request and MACOM-wide request for P2 funding that provides consistency across that MACOM and optimizes the use of DA funds and resources for viable P2 projects.

INTRODUCTION

The U.S. Army Military District of Washington (MDW) is 1 of 15 Major Army Commands (MACOM), with headquarters at Fort Lesley J. McNair in Washington, D.C. MDW is a multifaceted MACOM whose responsibilities are focused primarily on the National Capital Region (NCR). The mission of the MDW is to:

- conduct security or disaster relief operations in the NCR
- provide base operations support for US Army and DoD organizations throughout the NCR
- conduct official ceremonies and public events on behalf of the US Government civilian and military leadership

Maintaining a cost-effective and efficient MACOM-wide environmental program is an important element in ensuring sustainable execution of MDW's mission. The Department of Defense (DOD) and the Department of the Army (DA) have directed that environmental compliance will be achieved through pollution prevention (P2) and that MACOMs and installations will prepare P2 Plans.

MDW is comprised of 7 installations assigned to 5 military communities. MDW is a unique and highly diversified MACOM that lacks a concentration of heavy industrial operations or large-scale operations typical of other DA MACOMs. Consequently, many of the typical P2 projects and initiatives undertaken at installations in other MACOMs are not applicable to MDW. However, MDW's installations are situated in environmentally sensitive areas with high public visibility. For these reasons, a cost-effective and efficient MACOM-wide P2 Program is essential.

MDW has prepared this P2 Strategic Plan to:

- define its P2 strategy;
- communicate policy, guidance, and information required by each installation within MDW to support its P2 Program; and
- ensure the MACOM-wide P2 Program is consistent across all installations, efficient, and cost-effective.

The Strategic Plan outlines the P2 Program MDW will implement to achieve environmental compliance.

OBJECTIVES

MDW has established six objectives regarding P2. These objectives were developed and are stated in the Strategic Plan for two primary reasons. First, it is imperative to the success of the Program that MDW's objectives are established and that any actions or initiatives undertaken by MDW or the installations only be taken to fulfill one or more of the objectives. Second, MDW must communicate its MACOM-wide objectives to every installation to ensure that all installations recognize and understand the MACOM-level objectives and priorities. It is only with this understanding that MDW will ensure its P2 objectives are met.

Military District of Washington MACOM-wide P2 Program Objectives	
1.	Support the Military Mission <u>Metric:</u> No interruption of the military mission due to environmental issues.
2.	Achieve the DOD P2 Measures of Merit (MOMs) <u>Metric:</u> Strive to achieve the MOMs by the Compliance Date.
3.	Reduce Costs for Treatment, Disposal, and Compliance Through P2 <u>Metric:</u> Yearly reduction in treatment, disposal, and compliance costs, normalized against installation population (e.g., gallons of water used/ person), for sustained operations.
4.	Use P2 to Maintain Environmental Compliance <u>Metric:</u> No environmental compliance violations.
5.	Maintain DA-Compliant P2 Plans <u>Metric:</u> No ECAS audit findings due to non-compliant P2 Plans.
6.	Optimize the Use of P2 Funding in the MACOM <u>Metric:</u> Demonstrated cost-effective results from P2 fund expenditures.

Installations will develop and communicate additional installation-specific P2 objectives to MDW. These additional installation-specific objectives should reflect the MACOM-wide P2 Program objectives, or, due to the unique and diverse nature of MDW, address site-specific issues.

APPROACH

Through the development and distribution of this Strategic Plan, every installation in the MACOM will share a common understanding of the definition of P2 and MDW's requirements for P2 project identification and economic evaluation. Installations will request funding for P2 projects that meet MDW's definition of P2 and support the MACOM-wide P2 objectives stated in the Strategic Plan. MDW will utilize the funding strategy described in the Strategic Plan to generate a MACOM-wide request for P2 funding that optimizes the use of Department of the Army (DA) funds and resources.

Management of MDW's P2 Program in this manner will generate uniform and consistent P2 project identification and evaluation by its installations, resulting in effective and beneficial distribution of P2 funding received from DA. Implementation of MDW's P2 Strategic Plan will accelerate MDW's ability to meet DOD's directive of "compliance through pollution prevention" and attain the MOMs, and will, over time, reduce costs for treatment, disposal, and compliance.

POLLUTION PREVENTION PROGRAM

Pollution prevention is the use of materials, processes, or practices that *reduce* or *eliminate* the creation of pollutants or wastes *at the source* (i.e., source reduction). It includes practices that reduce the use of hazardous materials, energy, water, or other resources and practices that protect natural resources through conservation or more efficient use. Pollution prevention includes methods and techniques that reduce the generation of toxic chemicals, hazardous waste, solid waste, or wastewater. Pollution prevention is DA's and MDW's preferred mechanism for achieving environmental compliance and is an integral component of the MDW's environmental management strategy.

MDW will consider potential projects for funding in its P2 Program that cost-effectively:

- support achievement of DOD MOMs goals;
- support MACOM-wide P2 objectives;
- support installation-specific P2 objectives; and
- reduce water or energy use.

MDW will only consider installation projects under the P2 Pillar that have been developed in accordance with MDW objectives. Installation's projects that do not achieve P2 objectives may be submitted for funding under other environmental pillars such as Compliance, Conservation, or Restoration, as appropriate. Potential projects that reduce the cost of maintaining compliance will be considered as P2 projects. For example, a closed-cycle vehicle washer will maintain compliance and ultimately avoid the compliance issues associated with traditional wash racks.

IMPLEMENTATION AND FUNDING STRATEGY

MDW has developed its Strategic Plan to meet the objectives for its MACOM-wide P2 Program. The 8 steps necessary for an effective P2 program at MDW are illustrated in Figure 1 and explained briefly in the text below.

Development of the Strategic Plan is the first component of the P2 Program (Step 1). The Draft Strategic Plan was then submitted to each MDW installation and the MDW staff for review, and the Final Strategic Plan was issued to each installation following incorporation of responses to comments (Step 2). MDW then modified its MACOM-level P2 Plan to incorporate existing DA guidance and aspects of the Strategic Plan: together these documents, in conjunction with the installation P2 plans, form the entire basis of MDW's P2 Program (Step 3). MDW will assist each installation in updating its P2 Plan to conform with the intent of DA guidance, and in developing a schedule for P2 Plan updates and P2 Opportunity Assessments to coincide with Environmental Compliance Assessment System audits (Step 4). Installations will use existing DOD and DA documents as guidance in identifying needs for environmental projects (Step 5).

Key to the P2 Program is the funding strategy, which is comprised of steps 6 and 7 (Figure 1). The most difficult issue MDW faces in implementing its P2 Program is to develop a system to allow its best P2 projects to compete for DA funding with projects from other MACOMs that have industrial operations. MDW does not have large industrial operations and, therefore, does not generate large, costly hazardous and toxic waste streams.

MDW projects are worthy of funding when considering aspects that are not readily put into economic pay-back terms. Many MDW installation are located near environmentally sensitive areas and waterways (i.e., Chesapeake Bay, Potomac River, Anacostia River) with high public visibility. To address these issues, MDW has developed a 3-stage project evaluation process that requires installations to:

1. Execute the Service-Based Costing model (I-PAPA) developed by the Concepts Analysis Agency;
2. Develop dollar-based cost/benefit analyses (C/B) using the worksheet developed by the MDW/HLA team; and,
3. Use a Decision Matrix model developed by the MDW/HLA team which incorporates non-economic factors for each candidate project.

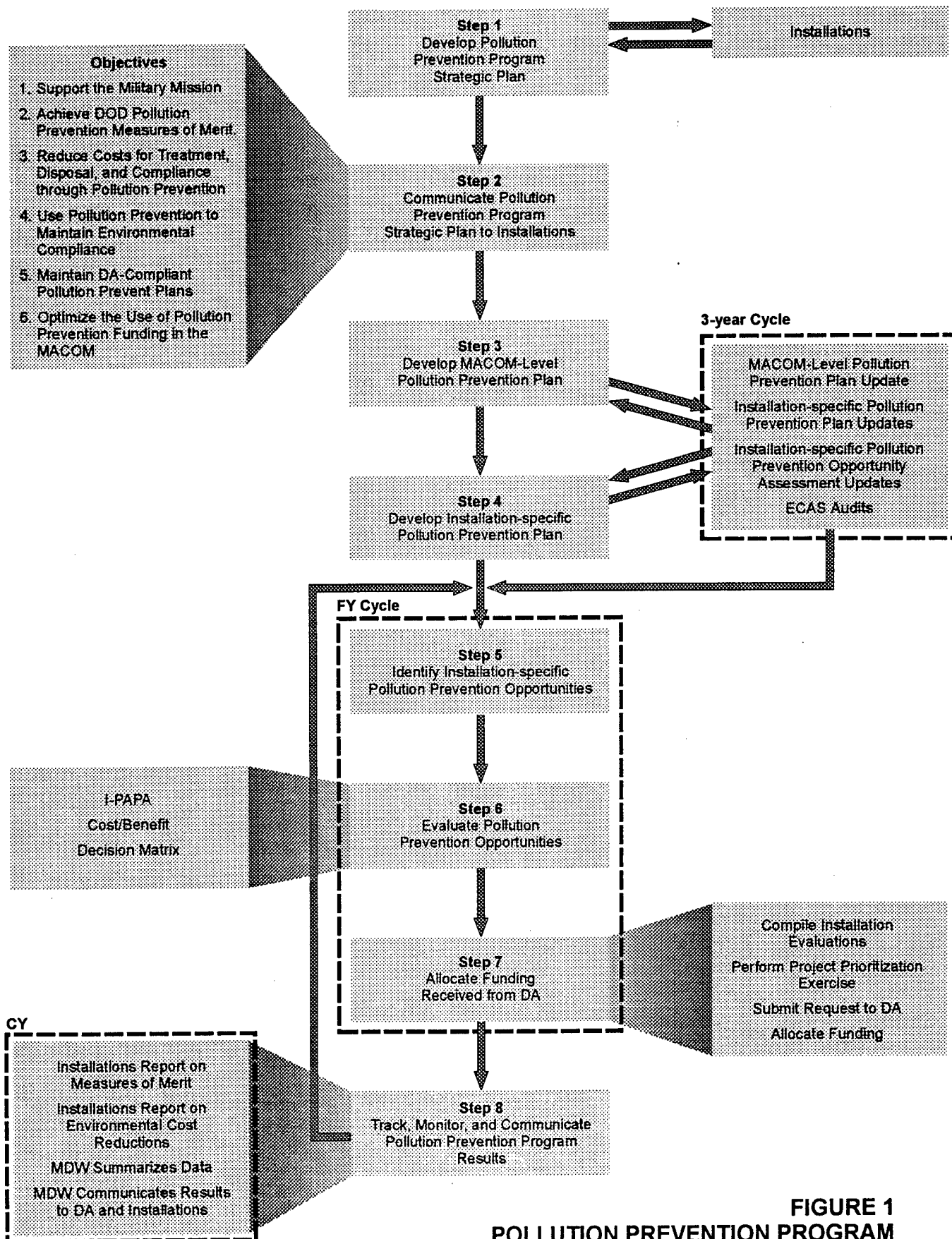


FIGURE 1
POLLUTION PREVENTION PROGRAM
MILITARY DISTRICT OF WASHINGTON

Once ranked at the installation level, installation environmental coordinators (ECs) submit the ranked P2 projects to MDW for evaluation and funding requests. This includes incorporating I-PAPA data into the Environmental Project Requirements (EPR) Report. MDW will weigh the results of all 3 project evaluations in setting priorities for funding. This method of project evaluation will ensure that MDW requests funding for cost-effective projects that enhance environmental protection and support - or don't impede - the MDW mission (Step 6).

Candidate P2 projects must contain some combination of the following: attractive pay-back results from the I-PAPA model (i.e., <5 year return on investment), significant environmental cost reduction benefits, or other environmental benefits to be included in MDW's request for funding to DA. These environmental benefits may be difficult to quantify, such as riparian buffers to protect Chesapeake Bay, or habitat protection for eagles. "Must fund" P2 projects must lead to cost-effective removal or reduction of the need for compliance by replacing procedures, practices, or equipment related to control or treatment approaches to compliance.

MDW will allocate funding received from DA for all environmental projects, including P2 projects, based upon the priorities established during project evaluation (Step 7). MDW's P2 Program has a structured tracking, monitoring, and communication element. Certain installations may not be able to cost-effectively achieve specific goals in MDW's Program due to site-specific constraints. MACOM-wide objectives will be emphasized to create a sense of teamwork throughout MDW and to enhance data validity at the MACOM level (Step 8).

SUMMARY/CONCLUSIONS

Our analysis indicates that the previous P2 program funding was not consistent with the intent to achieve compliance through P2. To move its P2 Program toward the directive of achieving and maintaining compliance through P2, MDW established six objectives for a new P2 Program in the MACOM. MDW then evaluated its existing systems, conducted a needs assessment of all of its installations, and prepared a P2 Strategic Plan that included an eight-step P2 Program. Key to MDW's Strategic Plan is a funding strategy that evaluates projects using tools provided by MDW: the Army's I-PAPA; a cost/benefit analysis developed by the MDW/HLA team; and a decision matrix model developed by the MDW/HLA team which incorporates non-economic environmental benefits. This P2 Strategic plan and its funding strategy allow both installations and MDW to promote candidate P2 projects using a consistent methodology of economic and non-economic factors. Application of the "P2 tools" by installations and the MACOM will streamline the P2 project ranking process and allow for optimization of limited Army funding.

ACKNOWLEDGMENTS

We would like to thank Colonel York, U.S. Army (Retired), and the ECs of all MDW installations for their support of this effort.